IN THE CLAIMS:

Please cancel Claims 2, 9, 21, 27, 30, and 37 without prejudice. Please amend Claims 1, 3 - 8, 12 - 14, 16, 19, 24, 26, 28 - 29, 32, 34, 36, and 38 - 40 as follows.

1. (Currently Amended) A wafer holder for retaining a substrate within a processing chamber comprising:

an electrode; and

one or more layers covering a portion of ~~the~~ said wafer holder which ~~in contact with the~~ contacts a wafer, where at least one of ~~the~~ said layers is compliant , so that said portion of said wafer holder which contacts said wafer deforms with said wafer, avoiding relative movement between said wafer and said contacted portion of said wafer holder, when there is thermal deformation of said wafer during processing.

2. (Cancelled)

3. (Currently Amended) The ~~chuck~~ wafer holder of claim 1 wherein ~~the~~ said compliant layer is an insulator having a dielectric constant between 1 and 3.

4. (Currently Amended) The ~~chuck~~ wafer holder of claim 1 wherein ~~the complaint~~ said compliant layer can withstand 10% shear stress without exceeding ~~the~~ a yield strength of ~~the~~ said compliant layer material.

5. (Currently Amended) The ~~chuck~~ wafer holder of claim 1 wherein the electrode comprises at least one conductive material selected from the group consisting of: copper, nickel, chromium, aluminum, iron, and mixtures or alloys thereof.

6. (Currently Amended) The ~~chuck~~ wafer holder of claim 1 wherein ~~the~~ said compliant layer comprises an insulative material selected from the group consisting of: fluorosilicones, polyamides, polyimides, polyketones, polyetherketones, polysulfones, polycarbonates, polystyrenes, polyurethanes, nylons, polyvinylchlorides, polypropylenes, ~~polyetherketones,~~ polyethersulfones, polyethylene terephthalate, fluoroethylene propylene copolymers, cellulose, triacetates, silicones and rubbers, and combinations thereof.

7. (Currently Amended) The ~~chuck~~ wafer holder of claim 1 wherein ~~the~~ said compliant layer is between 1 and ~~3~~ 10 μm thick.

8. (Currently Amended) An apparatus for projecting patterned charged particles onto a substrate comprising:

a processing chamber;

a charged particle source for generating a charged particle beam that impinges on the substrate; and

an electrostatic chuck comprising an electrode and one or more layers covering a portion of ~~the wafer~~ a substrate holder ~~in contact with the wafer~~ which contacts a substrate, where at least one of the layers is compliant , so that the portion of the substrate holder which contacts the substrate deforms with the substrate, avoiding relative movement between the substrate and the contacted portion of the substrate holder, when there is thermal deformation of the substrate during processing.

9. (Cancelled)

10. (Original) The apparatus of claim 8 further comprising:

a computer for calculating an estimated charged particle beam deflection to compensate for the actual deformation of the substrate caused by the exposure of the substrate to the charged particle beam, wherein the computer generates a deflection signal corresponding to the calculated deflection; and

a beam deflector for deflecting the charged particle beam in response to the deflection signal from the computer.

11. (Original) The apparatus of claim 8 wherein the compliant layer is an insulator having a dielectric constant between 1 and 3.

12. (Currently Amended) The apparatus of claim 8 wherein the compliant layer can withstand ~~of~~ 10% shear stress without exceeding the yield strength of the ~~complaint~~ compliant layer material.

13. (Currently Amended) The apparatus of claim 8 wherein the electrode ~~is~~ comprises ~~an~~ a conductive material selected from the group consisting of: copper, nickel, chromium, aluminum, iron, and mixtures thereof.

14. (Currently Amended) The apparatus of claim 8 wherein the compliant layer comprises an insulative material selected from the group consisting of: fluorosilicones, polyamides, polyimides, polyketones, polyetherketones, polysulfones, polycarbonates, polystyrenes, polyurethanes, nylons, polyvinylchlorides, polypropylenes, ~~polyetherketones,~~ polyethersulfones, polyethylene terephthalate, fluoroethylene propylene copolymers, cellulose, triacetates, silicones and rubbers, and combinations thereof.

15. (Original) The apparatus of claim 8 further comprising:

a lithography mask positioned between the charged particle source and the substrate; and

an electron sensor disposed within the processing chamber for detecting backscattered electrons emanating from the substrate.

16. (Currently Amended) The apparatus of claim 8 further comprising a substrate temperature sensor for measuring the temperature of the substrate during processing and for sending a signal corresponding to the measured substrate temperature to the computer ; .

17. (Original) The apparatus of claim 8 wherein the compliant layer is between 1 and 10 μm thick.

18. (Original) The apparatus of claim 8 wherein localized heating of the substrate due to exposure to the charged beam is between 1°C and 50°C.

19. (Currently Amended) A method for patterning a photoresist layer on a substrate comprising the steps of:

forming a photoresist layer on the substrate;

positioning the substrate on an electrostatic chuck having one or more layers covering a portion of the ~~wafer~~ substrate chuck ~~in contact with the wafer~~ which contacts the substrate , where at least one of the layers is compliant , so that the portion of the electrostatic chuck which contacts the substrate deforms with the substrate, avoiding relative movement between the substrate and the contacted portion of the electrostatic chuck, when there is thermal deformation of the substrate during processing; and

exposing portions of the photoresist layer on the substrate to a charged particle beam ; .

20. (Original) The method of claim 19 further comprising the steps:

computing an estimated deformation of the substrate caused by exposure of the substrate to the charged particle beam; and

deflecting the particle beam in response to the estimated deformation.

21. (Cancelled)

22. (Original) The method of claim 19 further comprising:

using a charged particle beam to scan a first mark on a photo lithography mask onto a second mark on said substrate;

detecting backscattered electrons from said scanning step;

determining the position of the substrate using the detected backscattered electrons; and

deflecting the charged particle beam in response to the measured position of the substrate.

23. (Original) The method of claim 19 wherein the compliant layer is an insulator having a dielectric constant between 1 and 3.

24. (Currently Amended) The method of claim 19 wherein the compliant layer comprises an insulative material selected from the group consisting of: fluorosilicones, polyamides, polyimides, polyketones, polyetherketones, polysulfones, polycarbonates, polystyrenes, polyurethanes, nylons, polyvinylchlorides, polypropylenes, ~~polyetherketones,~~ polycthersulfones, polyethylene terephthalate, fluoroethylene propylene copolymers, cellulose, triacetates, silicones and rubbers, and combinations thereof.

25. (Original) The method of claim 19 wherein the exposing step is performed using a SCALPEL lithography system.

26. (Currently Amended) An electrostatic chuck for use in substrate processing, the chuck having an electrode covered by an insulative layer for receiving the substrate, wherein the improvement comprises: the insulative layer ~~which~~ is elastic , in a manner such that the portion of the electrostatic chuck which contacts the substrate deforms with the wafer, avoiding relative movement between the substrate and the contacted portion of the electrostatic chuck, when there is thermal deformation of the substrate during processing, and can withstand 10% shear stress without exceeding the material yield strength.

27. (Cancelled)

28. (Currently Amended) The ~~apparatus~~ electrostatic chuck of claim 26 wherein the ~~compliant~~ insulative layer comprises an insulative material selected from the group consisting of: fluorosilicones, polyamides, polyimides, polyketones, polyetherketones, polysulfones, polycarbonates, polystyrenes, polyurethanes, nylons, polyvinylchlorides, polypropylenes, ~~polyetherketones,~~ polyethersulfones, polyethylene tercphthalate, fluoroethylene propylene copolymers, cellulose, triacetates, silicones and rubbers, and combinations thereof.

29. (Currently Amended) A method for holding a wafer on a chuck having an electrode and one or more layers covering a portion of the ~~wafer holder in contact with~~ chuck which contacts the wafer, the method comprising the steps of: selecting the layers so that at least one of the layers covering the portion of the chuck which contacts the wafer is compliant so that the portion of the chuck which contacts the wafer deforms with the wafer, avoiding relative movement between the wafer and the contacted portion of the chuck, when there is thermal deformation of the wafer during processing; ~~where at least one of the layers is compliant comprising the steps of:~~

placing the wafer on one of the layers of the chuck; and

energizing the electrode.

30. (Cancelled)

31. (Original) The method of claim 29 wherein the compliant layer is an insulator having a dielectric constant between 1 and 3.

32. (Currently) The method of claim 29 wherein the compliant layer can withstand 10% shear stress without exceeding the yield strength of the ~~complaint~~ compliant layer material.

33. (Original) The method of claim 29 wherein the electrode comprises at least one conductive material selected from the group consisting of: copper, nickel, chromium, aluminum, iron, and mixtures or alloys thereof.

34. (Currently Amended) The method of claim 29 wherein the compliant layer comprises an insulative material selected from the group consisting of: fluorosilicones, polyamides, polyimides, polyketones, polyetherketones, polysulfones, polycarbonates, polystyrenes, polyurethanes, nylons, polyvinylchlorides, polypropylenes, ~~polyetherketones,~~ polyethersulfones, polyethylene terephthalate, fluoroethylene propylene copolymers, cellulose, triacetates, silicones and rubbers, and combinations thereof.

35. (Original) The method of claim 29 wherein the compliant layer is between 1 and 10 μm thick.

36. (Currently Amended) An apparatus for handling a substrate for use in semiconductor processing comprising:

a ~~wafer~~ substrate holder; and

one or more layers covering a portion of the ~~wafer~~ substrate holder ~~in contact with~~ which contacts the ~~wafer~~ substrate ,where at least one of the layers is compliant , so that the portion of the substrate holder which contacts the substrate deforms with the substrate, avoiding relative movement between the substrate and the contacted portion of the substrate holder, when there is thermal deformation of the substrate during processing .

37. (Cancelled)

38. (Currently Amended) The apparatus of claim 36 wherein the compliant layer can withstand 10% shear stress without exceeding the yield strength of the ~~complaint~~ compliant layer material.

39. (Currently Amended) The apparatus of claim 36 wherein the compliant layer comprises an insulative material selected from the group consisting of: fluorosilicones, polyamides, polyimides, polyketones, polyetherketones, polysulfones, polycarbonates, polystyrenes, polyurethanes, nylons, polyvinylchlorides, polypropylenes, ~~polyetherketones,~~ polyethersulfones, polyethylene terephthalate, fluoroethylene propylene copolymers, cellulose, triacetates, silicones and rubbers, and combinations thereof.

40. (Currently Amended) The apparatus of claim 36 wherein the compliant layer is between 1 and ~~3~~ 10 μm thick.